ACC.11
60th Annual Scientific Session & Expo

E730
JACC April 5, 2011
Volume 57, Issue 14

IMAGING AND DIAGNOSTIC TESTING

PREVALENCE AND DETERMINANTS OF CORONARY ARTERY DISEASE IN FIRST-DEGREE RELATIVES OF PREMATURE CORONARY ARTERY DISEASE

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Sunday, April 03, 2011, 3:30 p.m.-4:45 p.m.

Session Title: CT Coronary Angiography - Plaque Imaging
Abstract Category: 36. CT Coronary Angiography
Session-Poster Board Number: 1061-207

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Background: The objective of this study was to investigate the prevalence of coronary artery disease (CAD) in first-degree relatives (FDRs) of premature CAD and its determinants other than conventional risk factors in Korean population.

Methods: One-hundred twenty-two FDRs (58 (54%) men, 50 ± 7 years) of patients with premature CAD were enrolled consecutively. Demographics data, serum and urine biochemistry and multidetector coronary computed tomography angiography (cCTA) were studied. The subjects had routine checkups in the same institution were used for the control group. To adjust for observed characteristics that are non-randomly assigned to different coronary risk factors such as compositions of Framingham risk scores (FRS) - age, sex, low density lipoprotein, blood pressure, presence of hypertension and diabetes, smoking - (FDRs group vs. control group), one-to-one propensity score matching was used.

Results: The prevalence of CAD (43 (35%) vs. 17 (14%), $p < 0.001$) and > 50% CAD (20 (16%) vs. 3 (2.5%), $p < 0.001$) detected by cCTA were higher in FDRs than control group. Mean coronary artery calcium score (CACS) showed tendency higher in FDRs than control group (28 ± 89 vs. 12 ± 63, $p = 0.098$) and prevalence of moderate to severe coronary artery calcification (CACS ≥ 100) was higher in FDRs (12 (10%) vs. 3 (2%), $p = 0.016$). In subgroup analysis of FDRs, subjects with CAD showed higher FRS

(10 ± 5 vs. 5 ± 4, $p < 0.001$; OR 1.064, 95% CI 0.995-1.288, $p = 0.060$), fasting blood sugar (96 ± 15 vs. 87 ± 10, $p = 0.002$; OR 1.064, 95% CI 1.009-1.122, $p = 0.021$), CACS (76 ± 134 vs. 0.2 ± 1.2, $p < 0.001$; OR 1.521, 95% CI 1.107-2.001, $p = 0.003$), and urinary albumin-creatinine ratio (UACR) (37 ± 119 vs. 10 ± 11, $p = 0.058$; OR 1.051, 95% CI 1.008-1.097, $p = 0.021$). In conditional regression analysis of both group, UACR had significant interaction with CAD in FDRs than control (OR 1.063, 95% CI 1.009-1.118, $p = 0.021$).

Conclusion: FDRs of premature CAD are more prevalent in CAD independent of conventional coronary risk factors of CAD. UACR may have an interaction with the development of CAD in FDRs of premature CAD.